

Appl. No. : 09/700,988
Filed : February 5, 2001

AMENDMENTS TO THE CLAIMS

Please cancel Claims 1-10, 27-29, and 31 without prejudice.

1-31 (canceled)

32 (previously presented): A non-aqueous secondary battery comprising a positive electrode, a negative electrode, and a lithium salt-containing electrolyte, the battery being at least 30 Wh in energy capacity and at least 180Wh/l in volume energy density and having a flat shape with a thickness of less than 12 mm, wherein the negative electrode is formed by graphite having an average particle diameter of 1 to 50 mm as active material, a resin as binder, and a metal as current collector, and the negative electrode has a porosity of 20 to 35%, an electrode density of 1.40 to 1.70 g/cm³, and an capacity of electrode of 400 mAh/cm³ or higher.

33 (previously presented): The non-aqueous secondary battery according to Claim 32, wherein the negative electrode contains a graphite material obtained by graphitizing mesocarbon microbeads.

34 (previously presented): A non-aqueous secondary battery comprising a positive electrode, a negative electrode, and a lithium salt-containing electrolyte, the battery being at least 30 Wh in energy capacity and at least 180Wh/l in volume energy density and having a flat shape with a thickness of less than 12 mm, wherein the negative electrode comprises as active material double-structure graphite particles formed with graphite-based particles and amorphous carbon layers covering the surface of the graphite-based particles, the graphite-based particles have (d002) spacing of (002) planes of not more than 0.34 nm as measured by X-ray wide-angle diffraction method, the amorphous carbon layers have (d002) spacing of (002) planes of 0.34 nm or higher, the negative electrode is formed by double-structure graphite particles having an average particle diameter of 1 to 50 mm as active material, a resin as binder, and a metal as current collector, and the negative electrode has a porosity of 20 to 35%, an electrode density of 1.20 to 1.60 g/cm³, and an capacity of electrode of 400 mAh/cm³ or higher.

35 (previously presented): A non-aqueous secondary battery comprising a positive electrode, a negative electrode, and a lithium salt-containing electrolyte, the battery being at least 30 Wh in energy capacity and at least 180Wh/l in volume energy density and having a flat shape with a thickness of less than 12 mm, wherein the negative electrode comprises as active material a carbon material manufactured by mixing at least one of artificial graphite and natural graphite

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with a carbon material having volatile components on the surface and/or in the inside and baking the mixture, the negative electrode is formed by a resin as binder and a metal as current collector, and the negative electrode has a porosity of 20 to 35%, an electrode density of 1.20 to 1.60 g/cm³, and an capacity of electrode of 400 mAh/cm³ or higher.